

Pectin's "a-peeling" future

Ingredient IQ:
Pectin



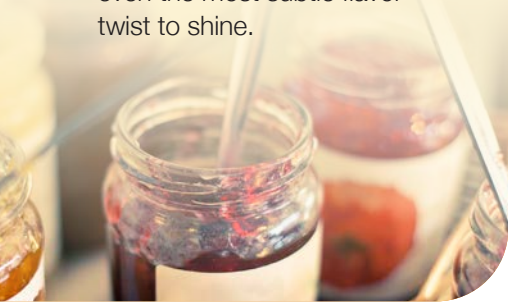
Even before the pandemic, consumers' health and wellness concerns were having a major impact on the food and beverage landscape. Today, those far-reaching effects are evident across categories, as brands race to bring forward a new generation of products that reflect shoppers' health perceptions – from plant-based to reduced-sugar.

Along the way, product developers are re-discovering pectin. The ingredient, which combines functional performance with label appeal, is establishing a foothold in an array of other food and beverage categories. From plant-based dairy alternatives to low-calorie beverages, learn how pectin is helping brands respond to today's biggest marketplace trends.

Key categories primed for pectin

Focus on flavor

The spreads category is a hotbed for flavor innovation. Brands are enticing consumers with something for every taste, from products that feature bold gourmet flavors like smoked pepper, to subdued floral notes like rose. There's also a clear move toward unique flavor pairings, such as rhubarb jams with cardamom hints or smoked-pepper-infused marmalades.⁵ Pectin, with its clean flavor release, allows even the most subtle flavor twist to shine.



Sourced from citrus peels and apple pomace, pectin offers plenty of label-friendly appeal. For many shoppers, there's a nostalgia factor with pectin, as they fondly associate it with grandma's homemade jams and jellies. That familiarity is reflected in proprietary research from Cargill, which found 47% of U.S. and 53% of European consumers are well aware of pectin as a food ingredient.¹

Familiar with pectin as a food ingredient:¹

47%
U.S. consumers

53%
European consumers

What those consumers may not realize, however, is how versatile the ingredient has become. Led by Cargill, the company that first pioneered commercial-scale pectin production in 1948, pectin suppliers continue to find new uses for the trusted ingredient. It's proven especially valuable in trendy vegan and reduced-sugar applications, which helps explain why the pectin market is expected to grow at an average rate of 3% year-on-year globally.²

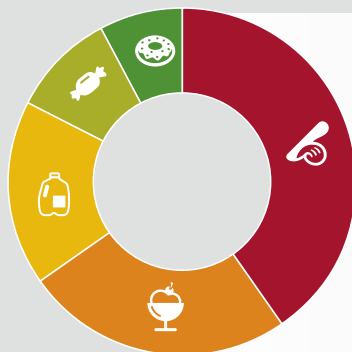
While the ingredient has found a place in everything from ice cream to vegan gummies, spreads remain its biggest application area. On the global stage, one in five new spreads launched in 2021 included pectin in the formula.³ Not surprisingly, the ingredient remains popular in the confiture and fruit spreads space, a subcategory that accounts for roughly 80% of new spread launches.⁴

Within the spreads category, trends around vegan formulation, sugar reduction and authentic, natural and homemade recipes are aligning to drive continued growth. They also suggest opportunity for pectin. Being plant-based, it is a trendy, functional, go-to ingredient which helps maintain texture and mouthfeel in reduced-sugar applications. Its connection to nostalgia and grandma's kitchen fits perfectly with premium products positioned as handcrafted or traditional recipes.

Other key categories for product innovation with pectin include desserts & ice creams, dairy, confectionery and bakery. Much like the spreads category, the ingredient's alignment with broader consumer trends is fueling its continued growth.

Top categories for pectin

% of global launches that include pectin



Source: Innova Market Insights, 2021.

It starts with health

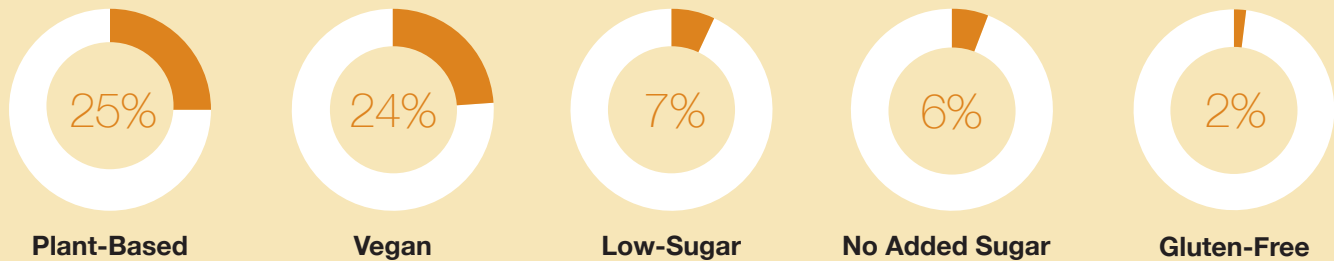


Dig into those trends, and it soon becomes clear that health has become one of the biggest influences across the food and beverage landscape. Research from FMCG Gurus finds consumers embracing healthier lifestyles as a bid to stay fit and active until late in life. Eight in ten shoppers say they plan to make healthier food and beverage choices,⁶ and many see reducing sugar and calories as a key avenue toward achieving that goal.⁷

Health concerns are also a big reason why plant-based eating is on the rise. Three in four (76%) American consumers, and nearly four in ten (37%) European consumers, view plant-based foods as healthier than animal-based foods.⁸

Those trends are also evident in the new product development claims associated with products containing pectin. Nearly a third (31%) of these products carried a plant-based claim, and 13% carried a sugar-related claim. Globally and across categories, halal (29%), plant-based (24%) and vegan (24%) are the fastest-growing claims associated with pectin-containing products (CAGR, 2015-21). Sugar-related claims – low sugar and no added sugar – round out the top five.⁹

Fastest-growing claims for global product launches with pectin



Source: Innova Market Insights, Global, 2015-21.

16%

In 2021, 16% of new product launches with sugar-related claims included pectin.¹¹

Innova data also helps illuminate where pectin is having the biggest impact on plant-based product development. Globally, among all product launches in 2021 with a plant-based claim, 11% included pectin. However, categories like desserts & ice creams (23%) and spreads (21%) saw even stronger correlations (2015-21).¹⁰

Pectin's prominence in new product launches with sugar reduction claims is even higher. In 2021, 16% of these products included pectin. Perhaps not surprisingly, spreads with a sugar-related claim are a key space for pectin, as the ingredient was included in 39% of these launches (2015-21). Pectin also appears regularly in dairy launches with sugar-related claims, included in 16% of these products (2015-21).¹¹

Finding the perfect pectin



Whether brands are targeting label-friendly, plant-based or reduced-sugar positioning, Cargill's pectin lineup supports innovation across a range of applications and product development goals. It includes both high-methoxyl (HM) and low-methoxyl (LM) pectins for greater formulation flexibility. LM pectins can be further categorized as either amidated (LMA) or non-amidated (LMC).

HM pectins, which need a high solids content (greater than 60%) and a low pH (2.8-3.5) to form a gel, are used to create chewy confections and thick jams. They also have application in reduced-sugar beverages, where they add viscosity and improve mouthfeel.

LM pectins work a little differently, as they rely on calcium to form a gel. As a result, total soluble solids are less important, making LM pectins the perfect choice for many applications which don't reach a solution of 60 brix (60g sugar in 40g solution). LM pectin can bring a wide variety of textures, playing on calcium content and its range of pectin reactivity (DE).

Pectins offer a lot of functionality, but sometimes to achieve a brand's texture goals, they're combined with starches, fibers or carrageenan. Because Cargill's texturizing experts understand how all these ingredients act independently and in combination, we can help formulators quickly land on the best texturizing solution for their unique needs.

By combining our texturizing and sweetening expertise, Cargill can support brands throughout their sugar- and calorie-reduction journey with solutions to deliver great taste while maintaining mouthfeel and texture.

INGREDIENT SPOTLIGHT

UniPECTINE® Uniquely perfected for you

Fruit applications

HM UniPECTINE® | UniPECTINE® OF, OB, OG and OH series

Cargill offers a complete range of HM, LMA and LMC pectin solutions, perfect for all types of fruit sub-applications (including jam, fruit preparations for dairy and preps for bakery). The line includes options suited to standard, reduced-sugar and/or organic applications, and covers a full array of specifications with regards to reactivity, pH, calcium content of fruit, filling temperature and more. These pectin solutions enable great fruit suspension and help ensure consistent, stable texture in both conventional and reduced-sugar applications.

Dairy/plant-based dairy alternatives

HM UniPECTINE® | UniPECTINE® ADF, AMP, AYD and AYS series

This range of pectins is designed for dairy and plant-based dairy alternatives, and includes both LM and HM pectins. The texturizing ingredients help control syneresis, a key concern in these products. In yogurts, they also provide viscosity and firmness for both set and stirred products. LM pectins help provide a gelled or creamy texture in acidic, fermented and neutral dairy and plant-based dairy products, while HM pectins protect proteins in acidic conditions and provide a pleasant mouthfeel, while helping to ensure consistent, stable texture in both conventional and sugar-reduced applications.

Beverage applications

UniPECTINE® Q series

Our UniPECTINE® Q series consists of label-friendly solutions with thickening and viscosifying properties plus good acid stability, suitable for a wide variety of beverages. In soft drinks, this pectin line builds a mouthfeel similar to fruit juices, making it a good candidate for juice drinks and low-calorie or sugar-reduced drinks.

High-intensity sweeteners

Achieve amazing, sugar-like taste and up to 100% sugar reduction with the industry's most advanced portfolio of high-intensity sweeteners, including:

- **EverSweet® + ClearFlo™** Our next-generation EverSweet stevia sweetener, plus ClearFlo natural flavor, delivers enhanced sweetness and sensory performance with dramatically improved solubility.
- **EverSweet® stevia sweetener:** Reb M sweetness – produced sustainably via fermentation – offers up to 100% sugar replacement without bitterness.
- **ViaTech® stevia leaf extract:** Our most advanced leaf-based sweetener enables sugar reductions of 50% or more.
- **Truvia® RA95 stevia leaf extract:** Leaf-based stevia sweetener, best for lower sugar reduction levels.

Complementary ingredients

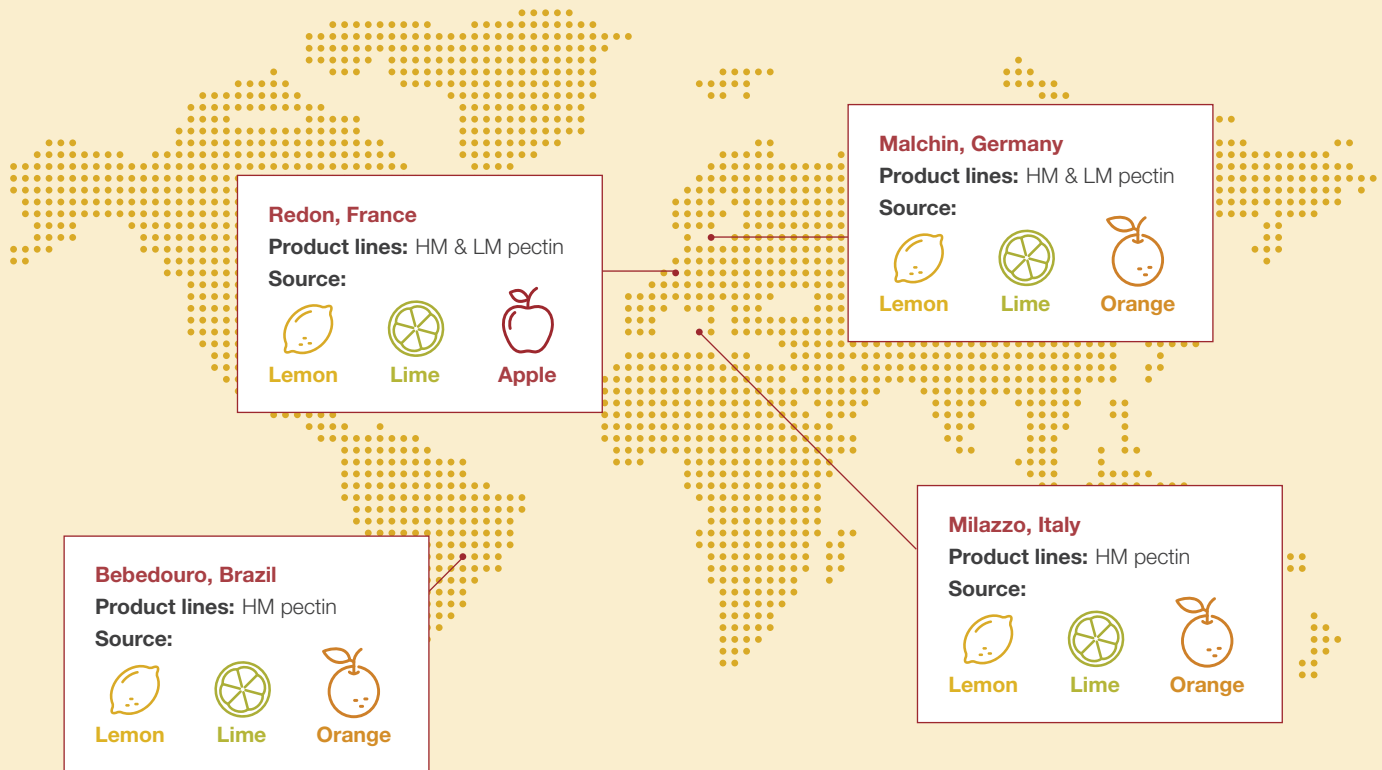
- **Zerose® erythritol:** A bulk sweetener with up-front sweetness that works synergistically with stevia leaf extracts.

Reliable global supply

Given its versatility and label appeal, it's no surprise that pectin demand is at an all-time high. In response, Cargill opened a \$150 million HM pectin plant in Bebedouro, Brazil, in September 2021. Built in the heart of Brazil's citrus-growing region, the new plant's proximity to citrus fields ensures an abundant supply of fresh fruit peels – the raw material required for premium pectin production.

The Brazilian plant also keeps with Cargill's commitment to source ingredients sustainably. This includes proximity to citrus suppliers and their Rainforest Alliance-certified farms, which helps minimize CO₂ emissions from raw material transport and promotes regenerative agriculture practices. Taking sustainability one step further, the Bebedouro plant is powered by thermal energy generated from biomass and biogas.

The new facility complements Cargill's three other pectin plants, located in France, Germany and Italy, spreading the company's production across two continents. These state-of-the-art production facilities produce Cargill's industry-leading pectin lines.



The Cargill advantage

As a global ingredient leader, Cargill offers a broad portfolio of pectin solutions, sourced from diversified raw material. They're suitable for a wide variety of applications and backed by world-class formulation expertise and supply chain reliability. We can help you meet the most challenging application goals and marketplace demands, whether you are creating an entirely new product or reformulating existing ones. Learn more at cargill.com/pectin.

References

- ¹ Cargill proprietary research, 2021.
- ² Estimate based on Trade Atlas data & global volume developments.
- ³ Innova Market Insights, 2021.
- ⁴ Innova database, 2021.
- ⁵ TrendHub, The Food People, 2021.
- ⁶ FMCG Gurus, 2021.
- ⁷ FMCG Gurus, "The War on Sugar in 2021," Dec 2020.
- ⁸ HealthFocus International, 2021.
- ⁹ Innova database, 2021.
- ¹⁰ Innova database, 2021.
- ¹¹ Innova database, 2021.

Claims: The labeling, substantiation and decision making of all claims for your products is your responsibility. We recommend you consult regulatory and legal advisors familiar with all applicable laws, rules and regulations prior to making labeling and claims decisions.